



**US Army Corps
of Engineers®**
New England District

November 2002

BENTHIC COMMUNITY SAMPLING AND ASSESSMENT

Benthic organisms (or benthos) include those organisms that either live on or beneath the seabed floor such as worms, shellfish, or other macroinvertebrates. In order to help evaluate potential project effects on benthic organisms and their habitat, the Proponent initiated field sampling studies throughout Nantucket Sound for inclusion in the EIS. In addition, these studies are also expected to facilitate an evaluation of potential impacts to fish, marine mammals and birds in Nantucket Sound that could potentially result from changes to the established predator/prey relationships in this ecosystem. The scope of work and sampling protocols that were implemented to conduct the benthic studies were developed through direct agency consultation.

In addition to field survey, an extensive review of previous studies and literature on the benthic community of Nantucket Sound was also performed. While a wide range of data and reports were available for many areas within Nantucket Sound, recent data were found to be somewhat limited, particularly for the specific areas that could potentially be affected by the Project.

Field Sampling Program Details:

In August of 2001, an assessment of the benthic organisms along the Cape Wind's proposed and alternative submarine cable routes and from their proposed alternative wind farm site on Horseshoe Shoal was conducted. The purpose of these collections was to accurately assess the present composition of the benthic community within the proposed Alternative Site. Sample locations were chosen in order to reflect the range of benthic habitats along the proposed and alternative cable routes originating from Lewis Bay and Popponesset Bay as well as their proposed alternative wind farm site on Horseshoe Shoal. 46 benthic grab samples were obtained from within the proposed alternative site. Benthic organisms in each sample were identified down to the lowest practicable taxonomic level and enumerated.

During spring of 2002, an assessment of the benthic community at each of Cape Wind's three alternative sites in Nantucket Sound was conducted. Each of the three study areas were evaluated with consideration for specific habitat variables such as water depth, sediment type and sand wave presence which are generally believed to be the primary environmental factors influencing benthic community abundance and diversity in Nantucket Sound. The environmental data analyzed was based on both existing data and surveys carried out by Ocean Surveys Inc. (OSI) during the 2001 field program and physical sediment analysis of each grab sample retrieved during this spring 2002 assessment. One benthic grab sample was obtained from each of 33 pre-determined locations.